ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

DATE: December 3, 1998

TO: DLPC Division File

FROM: Karen Nelson, Springfield Region Geologist, LPG# 196-000158

SUBJECT: LPC 1358070001 - Montgomery County
Hillsboro/Eagle Zinc
FOS

This report summarizes field observations made during the installation of groundwater monitoring wells on November 16, 1998 and the sampling of those wells on December 1, 1998.

November 16, 1998

Rich Johnson and Karen Nelson observed groundwater monitoring well installations at Eagle Zinc on November 16, 1998. We met Nancy Mackiewicz and Jeff Pigati, both geologists from Goodwin & Broms, Inc. and Greg Courson, geologic engineer/driller for Advanced Environmental Drilling. Tom Youngless, Eagle Zinc plant manager was also present for the drilling.

Monitoring wells G104, G106 and G102 had already been installed prior to our arrival. We observed the installation of G105 and G101. Well G109 was also installed that day but we did not observe the installation.

When we arrived on November 16, Mr. Courson was adding water to hydrate the bentonite (Enviroplug Medium) chips in well G102. Mr. Courson stated that they had no trouble hydrating the chips in the wells and they did not have to use more than 5 gallons of water in any of the wells to hydrate the chips. Mr. Courson stated that they placed six inches of chips in the hole and then added approximately 2 gallons of water and allowed it to hydrate (waited until the water was not percolating in) prior to adding the rest of the chips. This procedure was observed at the G105 and G101 and the bentonite appeared to adequately hydrate and seal off the annulus. The bentonite would have plenty of time to hydrate as the surface seals were not going to be installed until the next day. Mr. Courson stated he believed this procedure (placing and hydrating chips in lifts) provides a better seal than slurrying the bentonite into the hole. He stated that if the bentonite is hydrated out of the hole, most of the expansion has already occurred prior to placing it in the hole.

Mr. Pigati stated that the water table was encountered at about 4 feet deep. All the wells had been screened from 5 to 15 feet deep using PVC screens and risers. The surface seals were built such that water would drain away from the well.

They were setting up the drilling rig to drill through the residue at location G108 when we left the site.

I spoke with Ms. Mackiewicz on November 17 and she stated they were able to drill through the

residue pile at location G108 and the pile was about 30 feet deep. A sample of the residue was collected at 30 feet deep and the well was screened from about 35 to 45 feet deep. Ms. Mackiewicz stated that they planned on sampling the wells on December 2, 1998.

December 1, 1998 groundwater sampling

Groundwater samples were split with Goodwin & Broms on all nine groundwater monitoring wells at Eagle Zinc on December 1, 1998. Nancy Mackiewicz and Jeff Pigati represented G&B. Jan Hopper of DLPC/FOS - Springfield and Weldon Kunzeman of the Montgomery County Health Department assisted in the groundwater sampling. Mr. Tom Youngless, Eagle zinc plant manager was also present during the sampling.

During previous conversations with Nancy Mackiewicz of Goodwin & Broms, it was decided that total (unfiltered) metals would be required and dissolved (filtered) metals would be optional. Eagle Zinc opted to sample for both total and dissolved metals in addition to the other required parameters (organics and inorganics listed in Title 35 IAC Part 620). IEPA samples will be analyzed for total and dissolved inorganics, organics including volatile, semi-volatile and pesticides. For an exact list of parameters, refer to Attachment 2 (chain of custody forms).

It was decided during previous conversations with Ms. Mackiewicz that the water table wells (wells with the static water level straddling the screen) would be purged of one inner casing volume of water slowly such that the water level doesn't change drastically and volatile organics would be collected immediately after that. Purging the wells dry would be avoided prior to collected of the volatiles in order to reduce volatilization of the groundwater. For wells with the static water level above the screen, the wells would be purged such that the water level was not allowed to be lowered very far below the top of the screen to avoid volatilization. Again, volatile organics would be collected immediately after the purge. Then the wells could continue to be purged further if necessary after the volatiles were collected.

Most of the wells recharged very slowly and therefore the wells were allowed to recharge after the volatiles were collected. A complete sample was not able to be collected from G107 due to extremely slow recharge. Only the volatile bottles and ½ of the semi-volatile bottle were able to be filled for G107.

All purge water was containerized in drums on site.

The dissolved metals sample was collected via a ½ gallon plastic sample bottle and filtered out of that bottle into the appropriate preserved bottles. The samples were all filtered with a peristaltic pump, silicone tubing and .45 micron filter cartridge. The silicone tubing and filter cartridge were disposed after one use and new tubing and filter cartridge was used for each sample.

The total metals samples were collected in amber gallon sample bottles and split between G&B and IEPA by decanting into the appropriate preserved bottles. Due to turbidity, the sample was allowed to settle out for approximately one hour prior to decanting.

All IEPA sample bottles were sealed with evidence, placed in chilled coolers and the IEPA chain of custody form was utilized. Copies of the chain of custody forms are attached to this report.

Total Depths and Water Level Measurements: 12-1-98

Well#	Total Depth	Water Level
G101	16.95'	12.40'
G102	17.65'	4.65'
G103	17.55'	6.71'
G104	18.15'	10.16'
G105	17.95'	3.95'
G106	18.05'	6.03'
G107	17.70'	4.64'
G108	46.15'	26.84'
G109	16.85'	5.88'

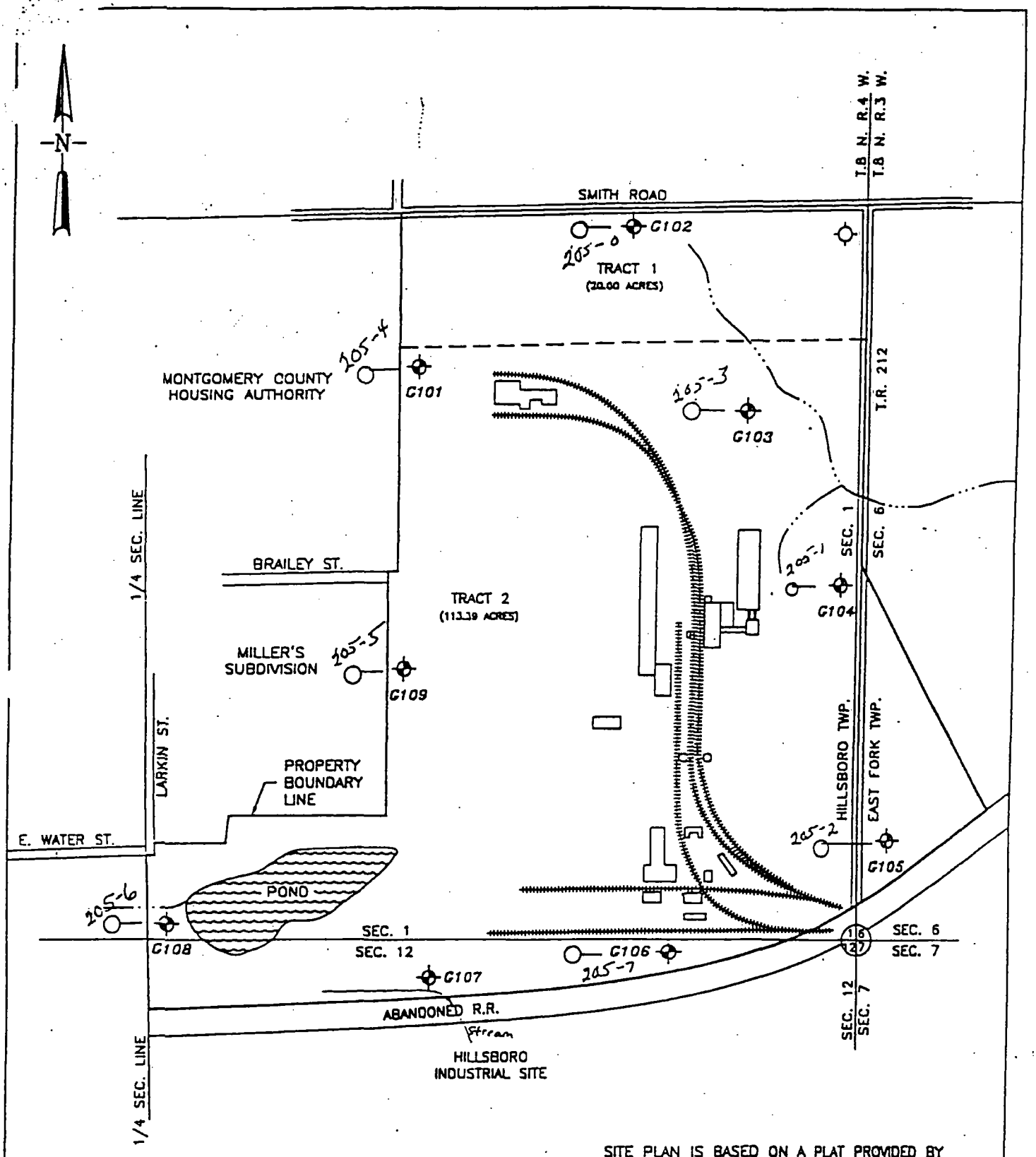
Eagle Zinc Samples Collected on 12-1-98

Sample #	Date to Lab	Champ Lab #	Spfld Lab #
G102	12-2-98	-	D81361-10
G02T	12-3-98	21102	-
G02D	12-3	21103	-
G104	12-2	-	D81361-11
G104T	12-3	21106	-
G104D	12-3	21169	-
G105	12-2	-	D81361-12
G05T	12-3	21104	-
G05D	12-3	21105	-
G103	12-2	-	D81361-13
G03T	12-3	21148	-
G03D	12-3	21168	-
G101	12-2	-	D81361-14
G01T	12-3	21146	-
G01D	12-3	21167	-
G109	12-2	-	D81361-15
G09T	12-3	21147	-
G09D	12-3	21170	-
G108	12-2	-	D81361-16
G08T	12-3	21149	-
G08D	12-3	21172	-
G107	12-2	-	D81361-17
G106	12-2	-	D81361-18
G06T	12-3	21144	-
G06D	12-3	21171	-

cc: DLPC/FOS - Springfield
Weldon Kunzeman, MCHD
John Sherrill

C:epa4312/EagleZinc/11-16MWs

ATTACHMENT 1



SITE PLAN IS BASED ON A PLAT PROVIDED BY HURST-ROSCH ENGINEERS, INC.

LEGEND

- PROPOSED MONITORING WELL LOCATION
- ALTERNATE LOCATION FOR MW1
- 205-5 Photo location & direction

300 0 300

SCALE IN FEET

FIGURE 1: SITE MAP SHOWING IEPA PROPOSED MONITORING WELL LOCATIONS

DRAWN BY: BAB	DATE: 5/21/98	REVISED: 10/20/98	REVISED: 10/26/98

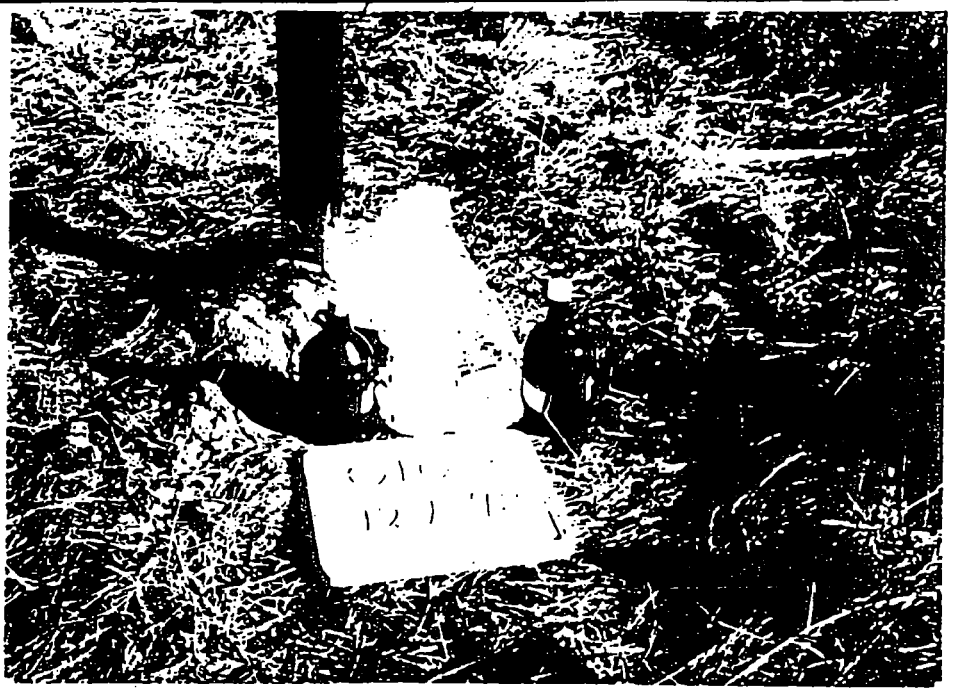
EAGLE ZINC / HILLSBORO, ILLINOIS

GOODWIN & BROMS, INC.
CONSULTING ENVIRONMENTAL ENGINEERS

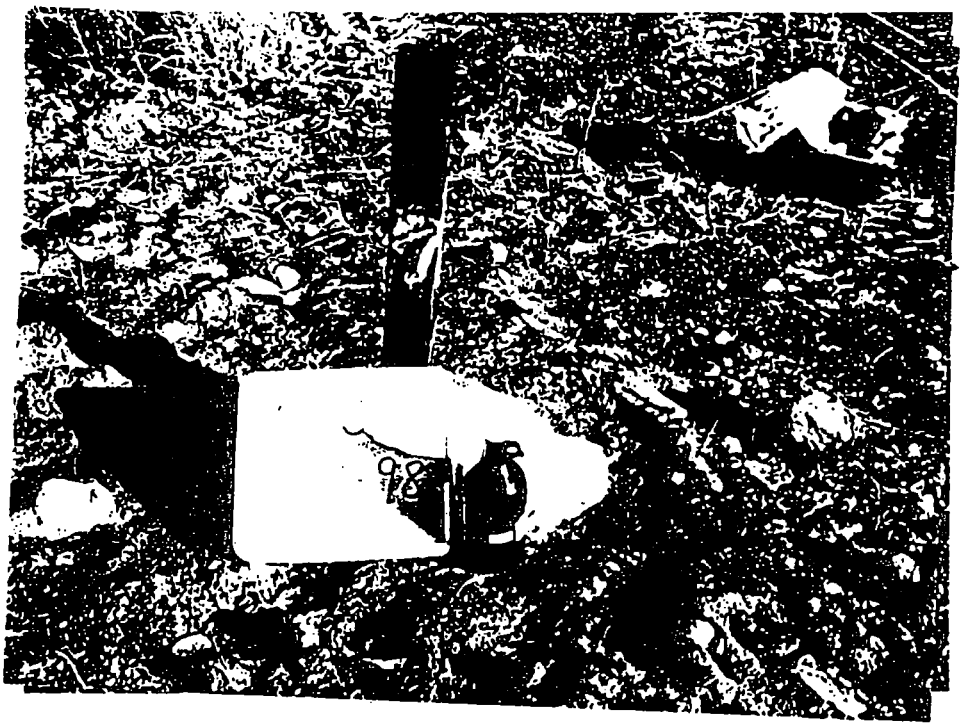
DRAWING NUMBER 97-246

INSPECTION PHOTOS

DATE: 12/1/98	SITE #: 1358700C1 CO.: Montgomery
TIME: 1250	SITE NAME: Hillsboro / Eaok Inc
PHOTOGRAPH TAKEN BY: W. Kunzeman	
COMMENTS: Pictures taken toward: East	
ROLL #: 205 Neg. #: 0	



DATE: 12/1/98	
TIME: 1305	
PHOTOGRAPH TAKEN BY: W. Kunzeman	
COMMENTS: Pictures taken toward: East	
ROLL #: 205 Neg. #: 1	



FOS

INSPECTION PHOTOS

DATE: 12/1/98	SITE #: 1 3 5 8 6 7 0 0 0 1 CO.: Montgomery
TIME: 1318	SITE NAME: Hillsboro / East Zinc
PHOTOGRAPH TAKEN BY: W.Kunzeman	
COMMENTS: Pictures taken toward: East	
ROLL #: 205 Neg. #: 2	

DATE: 12/1/98	
TIME: 1334	
PHOTOGRAPH TAKEN BY: W. Kunzeman	
COMMENTS: Pictures taken toward: East	
ROLL #: 205 Neg. #: 3	

FOS

INSPECTION PHOTOS

DATE: 12/1/98	SITE #: 1 3 5 8 0 7 0 0 0 1 CO.: Montgomery
TIME: 1349	SITE NAME: Hillsboro / Eagle Zinc

PHOTOGRAPH TAKEN BY: W.Kunzeman

COMMENTS: Pictures taken toward: East

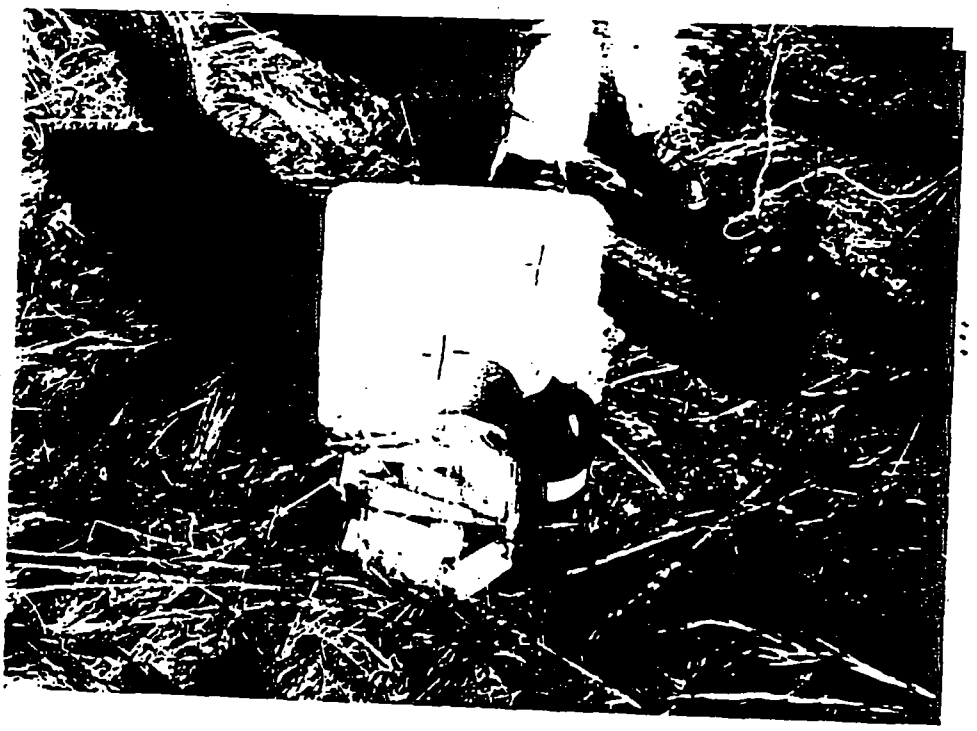
ROLL #: 205 Neg. #: 4

DATE: 12/1/98	
TIME: 1404	

PHOTOGRAPH TAKEN BY: W. Kunzeman

COMMENTS: Pictures taken toward: East

ROLL #: 205 Neg. #: 5



FOS

INSPECTION PHOTOS

DATE: 12/1/98	SITE #: 1 3 5 8 0 7 0 0 0 1 CO.: Montgomery
TIME: 1434	SITE NAME: Hillsboro / East Zinc

PHOTOGRAPH TAKEN BY: W. Kunzeman

COMMENTS: Pictures taken toward: East

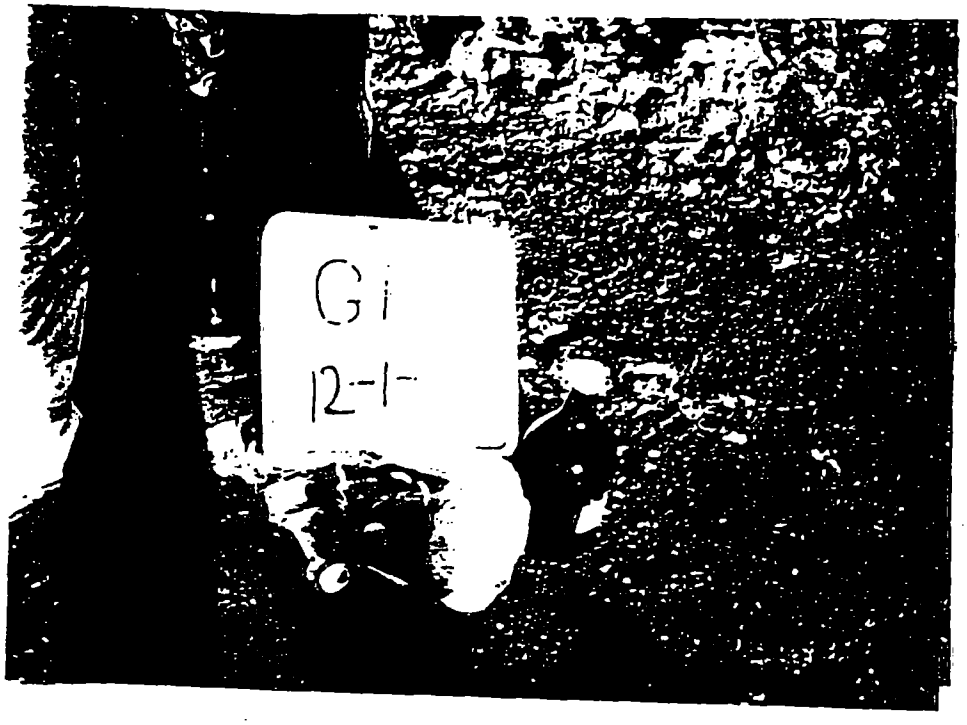
ROLL #: 205 Neg. #: 6

DATE: 12/1/98	
TIME: 1448	

PHOTOGRAPH TAKEN BY: W. Kunzeman

COMMENTS: Pictures taken toward: East

ROLL #: 205 Neg. #: 7



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